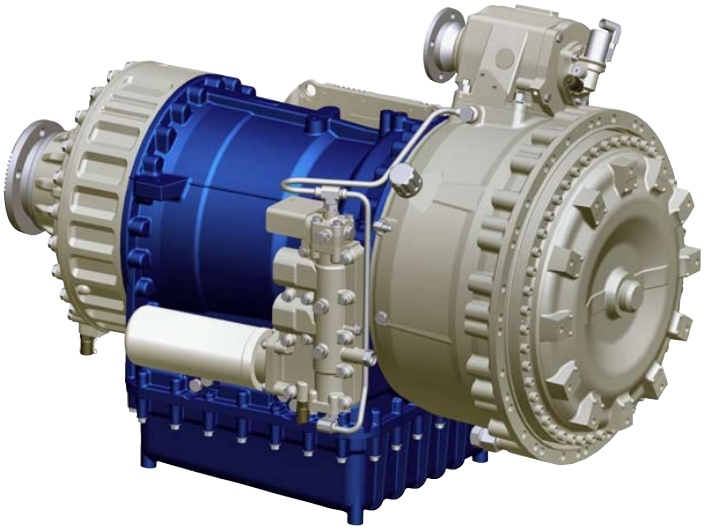


Gearbox with power take-off (option).

PT2606 is a 6-speed fully automatic planetary gearbox with the possibility of manual gearchanges. PT2606 is dimensioned for engine torque of 2600 Nm.

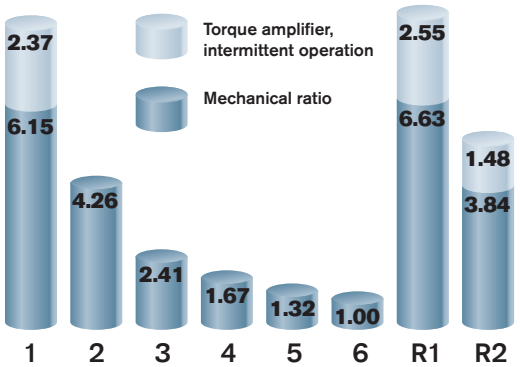
Powertronic PT2606 is specially developed for heavy transport operations. It offers smooth, gentle gearchanges without any interruption in power delivery and permits safe starts even in difficult conditions. This makes it ideal for demanding construction applications and urban transportation duties characterised by frequent stop-start driving. PT2606 has an efficient control system and well-adapted gearchange strategies. The gearbox has long oil change intervals. If special oil is used, the oil needs changing every 200,000 km or every two years.

PT2606 consists of a hydraulic torque amplifier with lock-up, a number of planetary gears with multiple disc brakes and clutches that lock to the various parts of the planetary gear. The gearchanging functions are completely electronically controlled and monitored via control units for the gear selector and the gearbox, integrated in the truck's electronic system.

The torque amplifier is robustly designed to match the engine's torque, offering excellent pulling power and hill-climbing ability. The torque amplifier steps up the engine's torque and in this way provides excellent starting traction. It also absorbs all snatch in the driveline when starting off from standstill. The torque amplifier is equipped with automatic lock-up that locks the impeller and turbine wheel to each other. This lock-up is activated on all gears and offers a high efficiency rating, low fuel consumption and low running costs.

FEATURES AND BENEFITS

- Smooth gearchanges without interruption in power delivery, both in fully-automatic and manual modes.
- Good starting traction even in difficult operating conditions.
- The driver can adapt the driving program to the prevailing road conditions.
- Automatic lock-up in all gears.
- Electronic control allows advanced diagnostics and fault-tracing.
- Long oil change intervals allow increased access.
- Engine-driven power take-off as an option.
- Integrated retarder as an option.



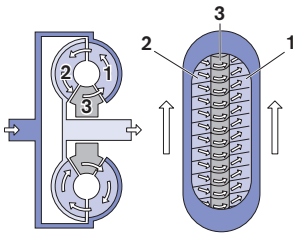
The ratio levels for intermittent operation apply for the D13C540 engine.

Lock-up improves efficiency rating

Power from the engine is transmitted to the automatic gearbox via the torque amplifier. In the torque amplifier, the engine torque is increased steplessly by an impeller (1) which presses oil onto a turbine wheel (2). When the oil flow reaches the turbine wheel, the wheel starts spinning and transmits power to the gearbox.

The intermediate wheel is carried in bearings on a free wheel (3) between the turbine wheel and the impeller. The intermediate wheel is locked to the gearbox housing in one of the rotation directions, while in the other rotation direction it rotates with the other wheels. The intermediate wheel directs the flow of oil from the turbine wheel back into the impeller at the optimum angle for the impeller. The greater the speed difference between the impeller and turbine wheel, the greater the torque amplification and the counter-force on the intermediate wheel.

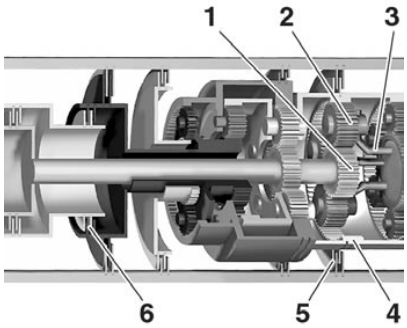
When the vehicle's speed increases, the impeller and turbine wheel rotate at the same speed and the intermediate wheel rotates along with them. No torque amplification occurs at this point. In order to avoid power losses, the impeller and turbine wheel are now locked to each other via a direct lock-up clutch. This ensures a high efficiency rating and low fuel consumption.



Torque amplifier with impeller (1), turbine wheel (2) and intermediate wheel (3).

Compact planetary gear system.

Power from the torque amplifier is transmitted to the gearbox's planetary gear system. It consists of five planetary gears and a number of hydraulically controlled disc clutches and brakes. The planetary gear consists of a sun wheel (1), planetary gear (2), planetary gear carrier (3) and a ring gear (4). The oil cooled brakes (5) and disc clutches (6) control the planetary gears' function. Different gear ratios are obtained by locking certain parts of the planetary gear and allowing other parts to rotate.



Planetary gear with sun wheel (1), planetary gear (2), planetary gear carrier (3), ring gear (4), brake (5) and disc clutch (6).

Driving program for optimum efficiency

In Automatic mode, the driver can choose between different driving programs depending on current conditions. Economy mode provides good fuel economy. In this mode, gearchanges take place at the most economical revs. The Performance mode is used when extra engine power is needed. In this mode, gearchanges take place at higher engine revs. There is also the option of manual gearchanging. In Manual mode, the driver changes gears with a rocker switch on the gear lever.

Ready-prepared for power take-off

The gearbox is available with an optional power take-off designed for propshaft operation or direct-fitted hydraulic pumps. The power take-offs are powered directly from the engine via the torque amplifier, and can be engaged and disengaged using the hydraulically controlled disc clutch during driving.

The position of the power take-off makes it possible also to have a gearbox mounted power take-off installation.

SPECIFICATION

Type designation	PT2606
Weight without oil	450 kg
Type	Automatic planetary gearbox
Max. torque	2600 Nm
Number of forward gears	6
Reverse gears	2
Max. ratio in torque amplifier	2.07
Gear selector positions:	
R	Reverse
N	Neutral
A	Automatic
M	Manual
Driving programs:	
E	Economy program
P	Performance program (full power)
Oil-change quantity with oil cooler	approx. 32 l

VOLVO

Volvo Truck Corporation
www.volvotrucks.com